Movements of coastal cutthroat trout (Oncorhynchus clarki) in the Lower Columbia River: tributary, main-stem and estuary use

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Investigations on the timing and extent of movements by coastal cutthroat trout were initiated in 2001 in order to provide critical information on estuary and main-stem habitat use. Approaches focused on juvenile movements. Monitoring smolt emigration, adult return, and the prevalence of juvenile excursions into main-stem and estuarine habitat involved the construction of stationary PIT tag (Passive Integrated Transponder) interrogation arrays in three Lower Columbia tributaries, Chinook River (6 km), Abernathy Creek (76 km) and Gee Creek (128 km). In these tributaries, 448, 455, and 32 fish respectively were captured by electro-fishing and implanted with a 23 mm PIT tags. Movements past interrogation arrays are anticipated in the spring of 2003. Timing and speed of juvenile migration was investigated using both active and passive radio and passive acoustic telemetry in the spring of 2002. In Abernathy, Mill (75 km) and Germany Creeks (79 km) a total of 96 juveniles were implanted with digitally coded radio transmitters. In these tributaries and the Chinook River, a total of 49 juveniles were implanted with coded acoustic pingers. Of these tagged fish, movement data from 91 (95%) and 32 (65%) of these tagged fish were recorded. These data suggest that migrant cutthroat trout leave the tributaries and make rapid, directed movements into seawater, often within 5 days of entry into the main-stem environment. Physiological data (increased gill Na,K-ATPase and increased seawater tolerance during the spring) further suggests a smolting process and migration comparable to other salmonids with regards to estuarine use.